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PATENT & TRADEMARK OFFICE
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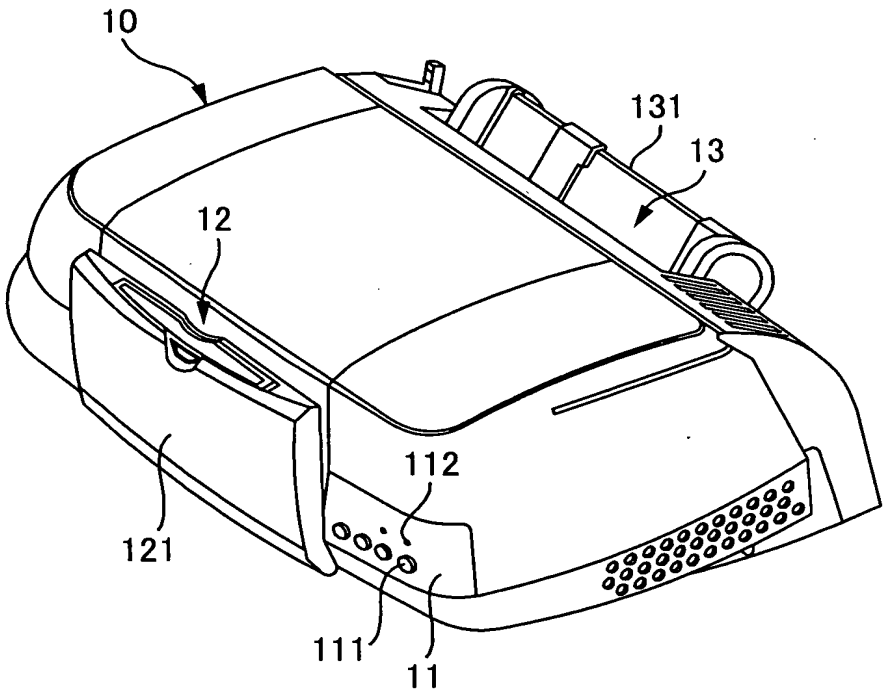

FIG. 1

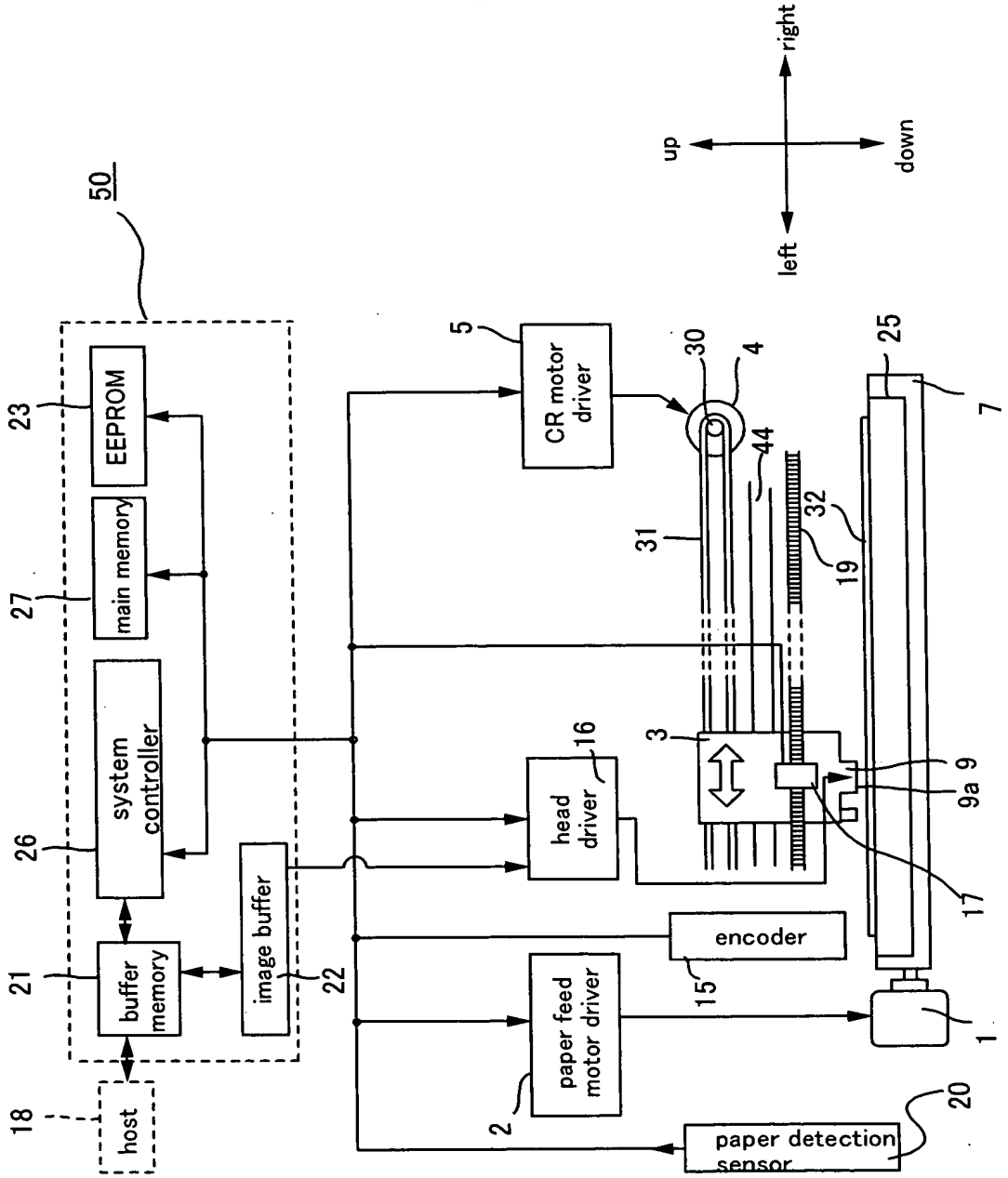
right
up
down
left
50
EEPROM
23
main memory
27
system controller
26
buffer memory
21
image buffer
22
host
18
CR motor driver
5
head driver
16
paper feed motor driver
2
encoder
15
paper detection sensor
20
30
4
44
31
32
19
25
7
3
9a
9
17
1

FIG. 2

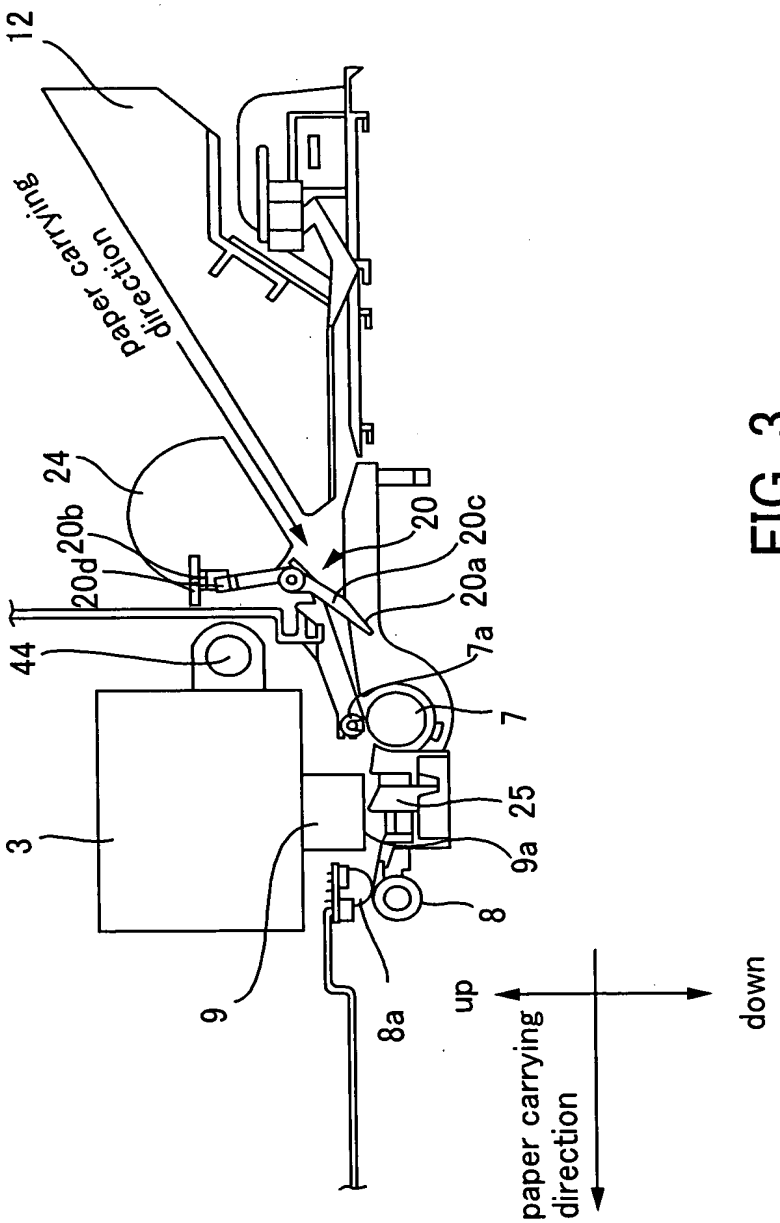
12
paper carrying direction
24
20b
20d
20
20c
20a
44
7a
7
3
25
9a
8
9
8a
up
down
paper carrying direction

FIG. 3

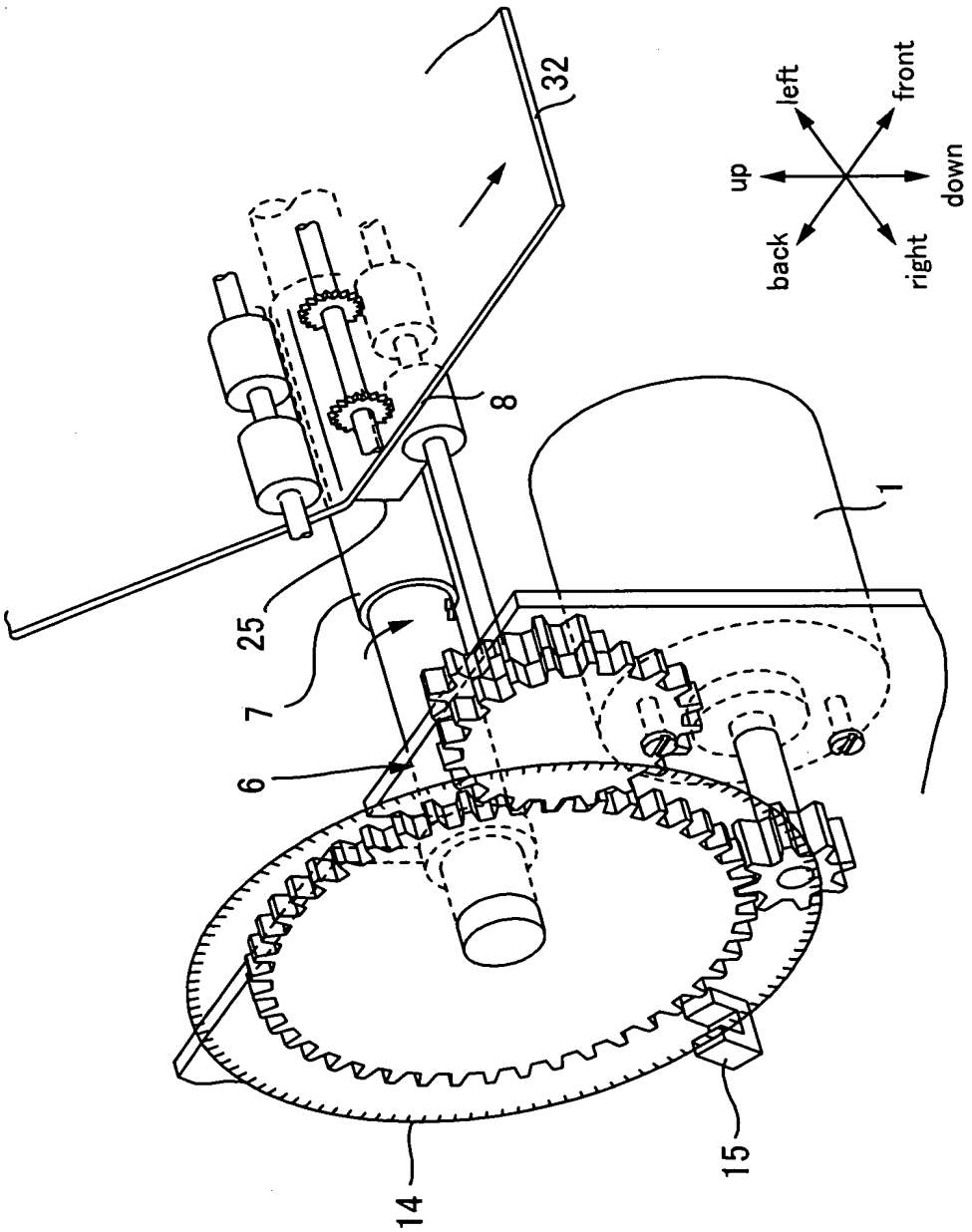

FIG. 4

carry characteristics table

paper type	aggregate carry amount (inch)	correction value	correction amount (inch)
A4	1	1	+1/5760
(thin paper)	2	1	+1/5760
	3	0	0
	4	0	0
	5	0	0
	6	0	0
	7	0	0
	8	0	0
	9	−1	−1/5767
	10	−1	−1/5767
A4	1	3	+3/5760
(thick paper)	1.25	3	+3/5760
	1.5	2	+2/5760
	2	2	+2/5760
	2.5	1	+1/5760
	3	1	+1/5761
	3.5	1	+1/5762
	4	1	+1/5763
	4.5	1	+1/5764
	5	0	0
	5.5	0	0
	6	0	0
	7	0	0
	8	0	0
	8.5	−1	−1/5767
	9	−1	−1/5767
	9.25	−1	−1/5767
	9.5	−1	−1/5767
	9.75	−2	−2/5767
	10	−2	−2/5767
postcard	1	2	+2/5760
	2	1	+1/5761
	3	0	0
	4	0	0
	5	−1	−1/5767

paper type	aggregate carry amount (inch)	correction value	correction amount (inch)
A4	1	3	+3/5760
OHP sheet	2	2	+2/5760
	3	2	+2/5760
	4	1	+1/5761
	5	0	0
	6	0	0
	7	−1	−1/5767
	8	−2	−2/5767
	9	−2	−2/5767
	10	−3	−3/5767
A3	1	3	+3/5760
(thin paper)	2	3	+3/5760
	3	2	+2/5760
	4	2	+2/5760
	5	1	+1/5760
	6	1	+1/5761
	7	1	+1/5762
	8	1	+1/5763
	9	1	+1/5764
	10	0	0
	11	0	0
	12	0	0
	13	0	0
	14	0	0
	15	−1	−1/5767
	16	−1	−1/5767
	17	−1	−1/5767
	18	−1	−1/5767
	19	−2	−2/5767
	20	−2	−2/5767

FIG. 5

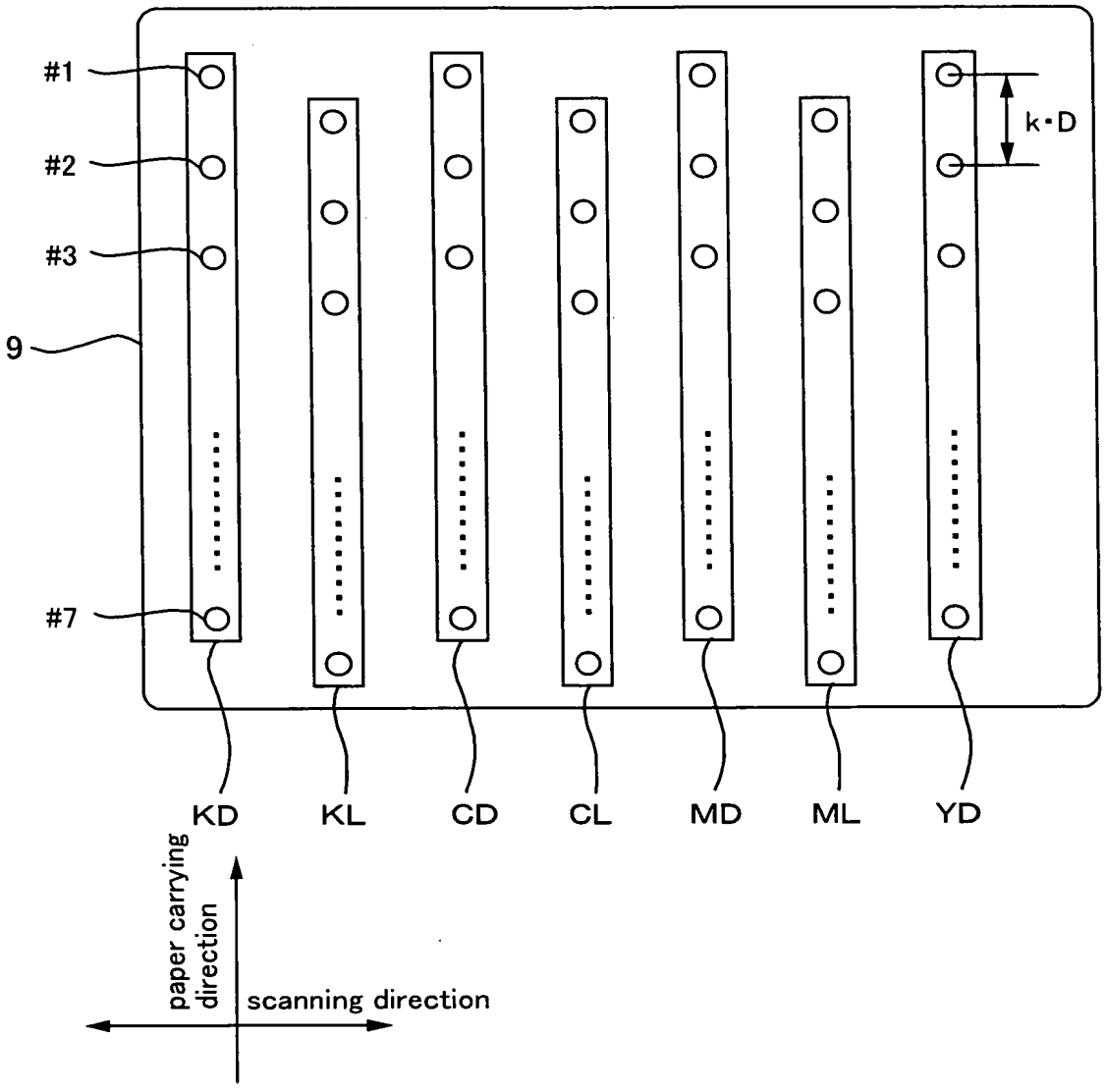
#1
#2
#3
9
#7
k•D
KD
KL
CD
CL
MD
ML
YD
paper carrying direction
scanning direction

FIG. 6

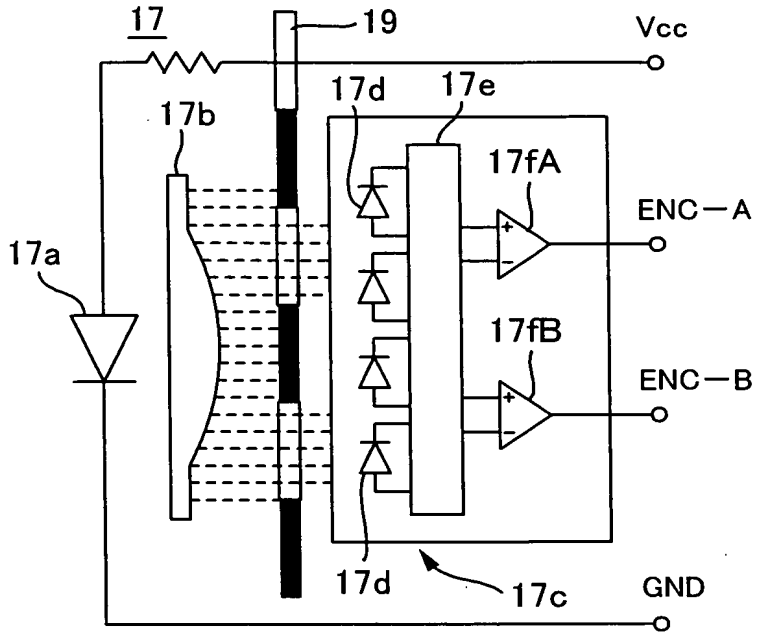

FIG. 7

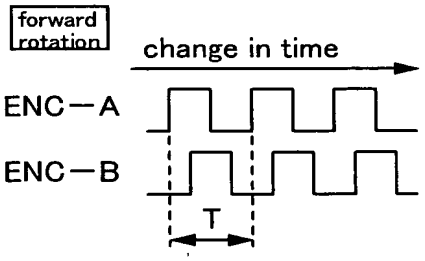

FIG. 8A

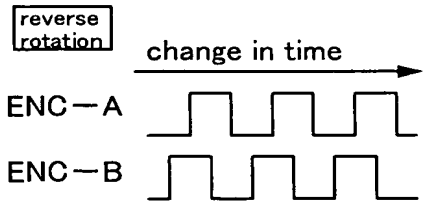

FIG. 8B

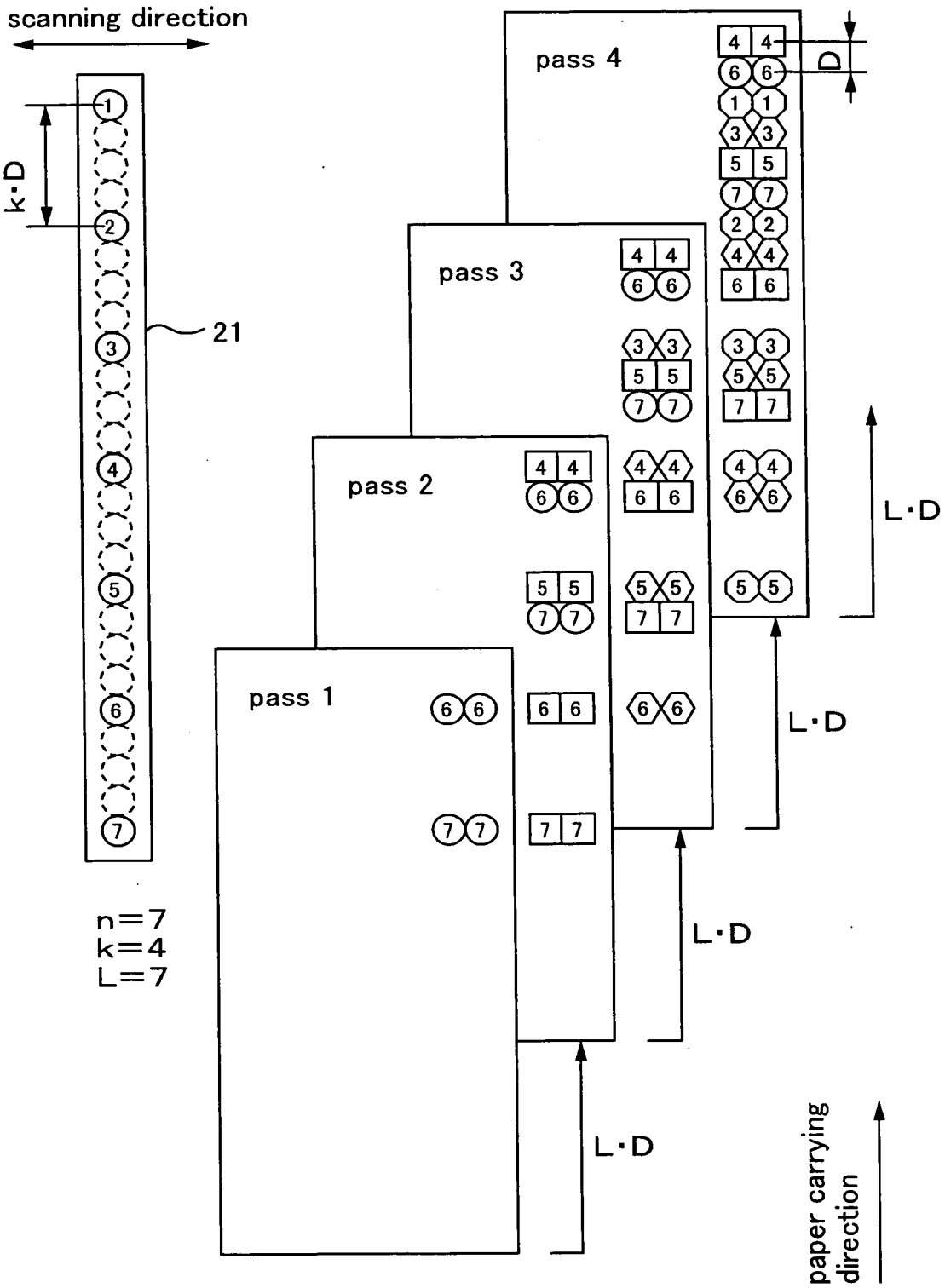
scanning direction
k·D
21
n=7
k=4
L=7
pass 4
pass 3
pass 2
pass 1
D
L·D
L·D
L·D
L·D
paper carrying direction

FIG. 9

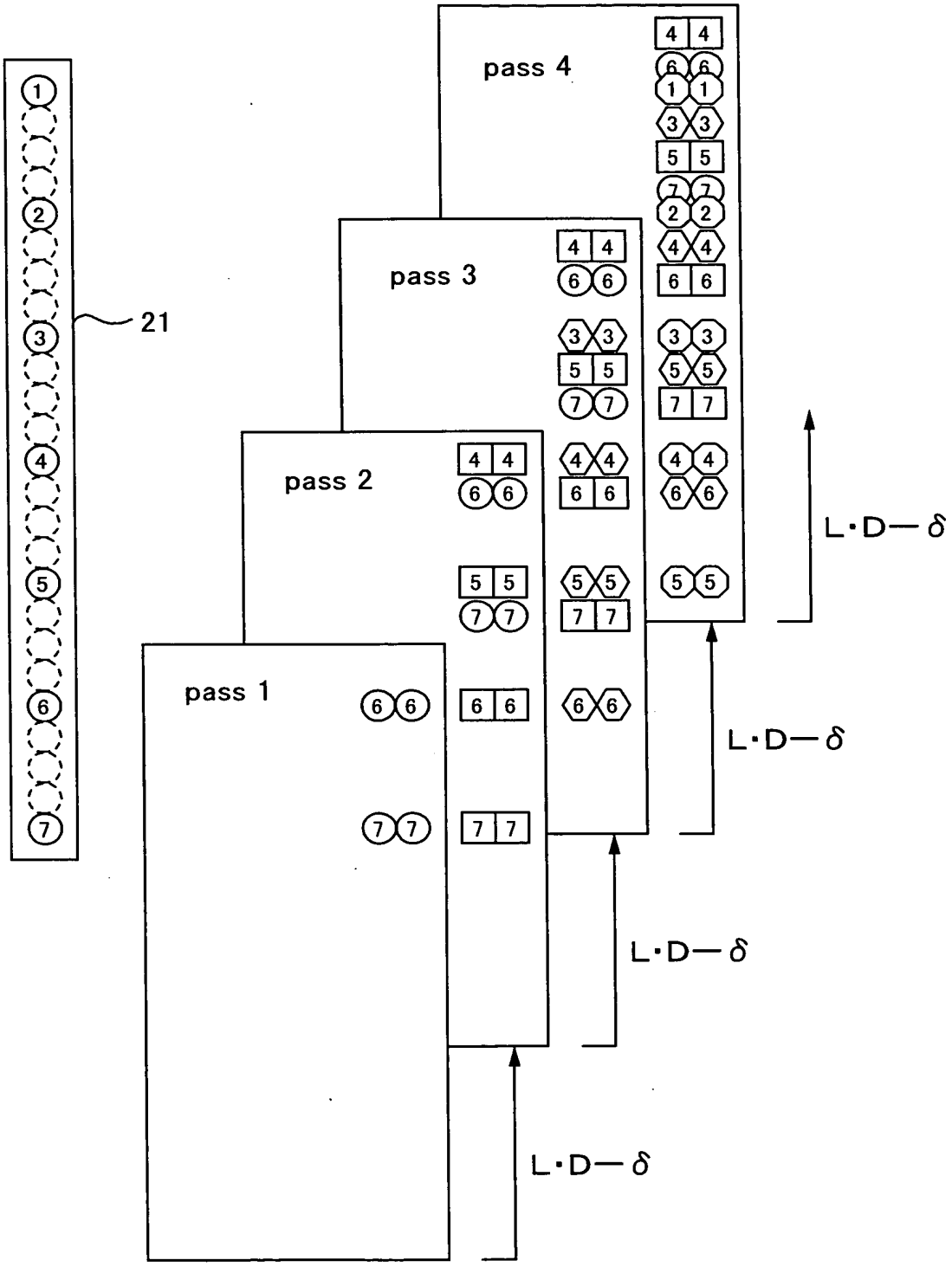

FIG. 10

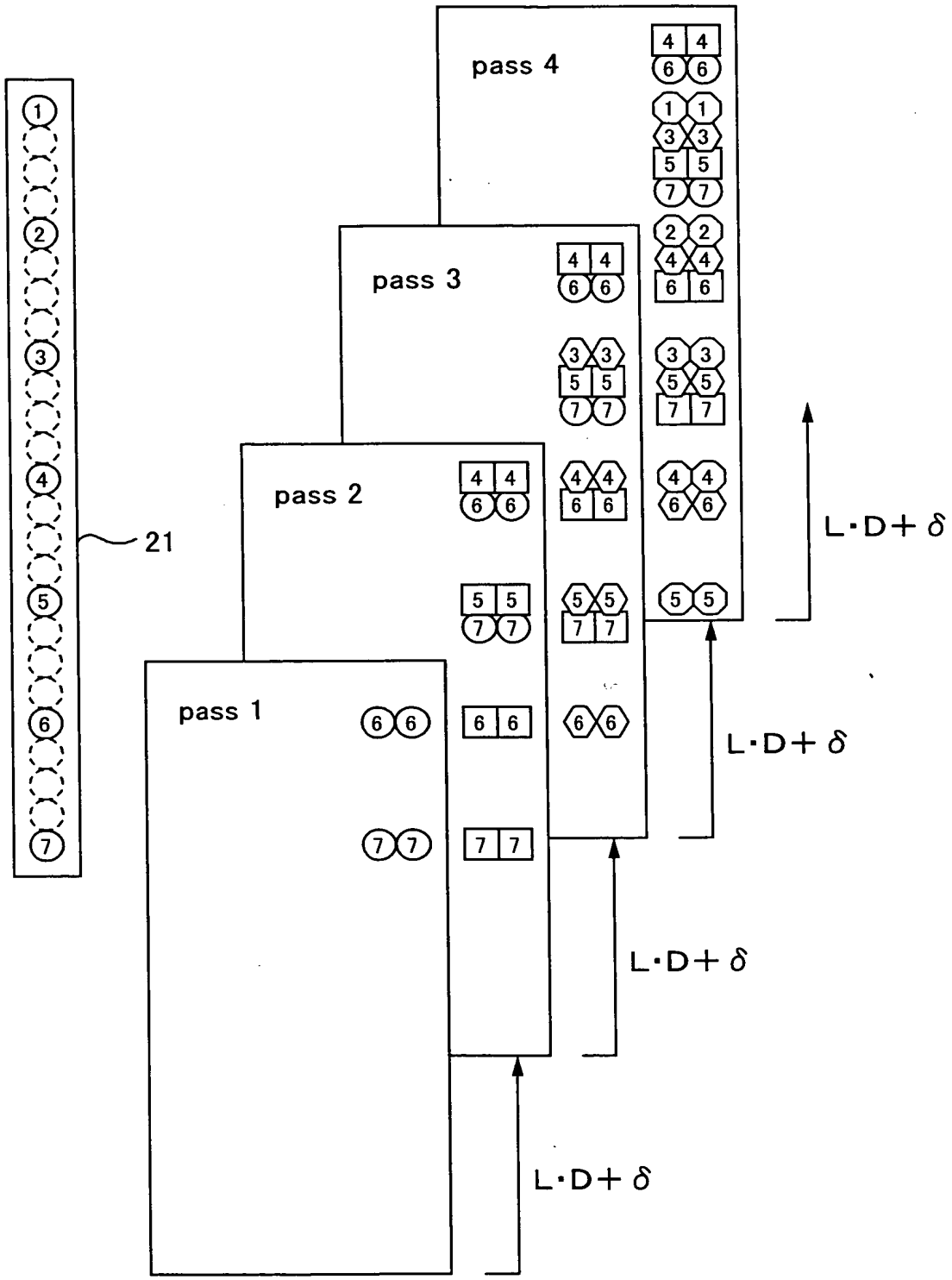

FIG. 11

when the error is $-\delta$
(dark banding occurs between L2 and L3)

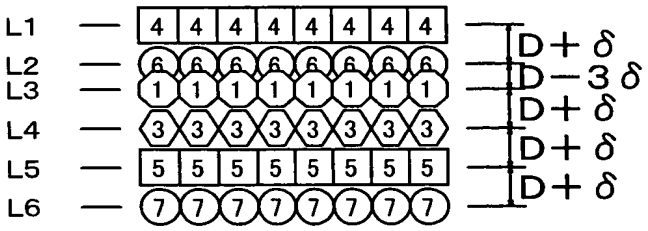

FIG. 12A

when the error is $+\delta$
(bright banding occurs between L2 and L3)

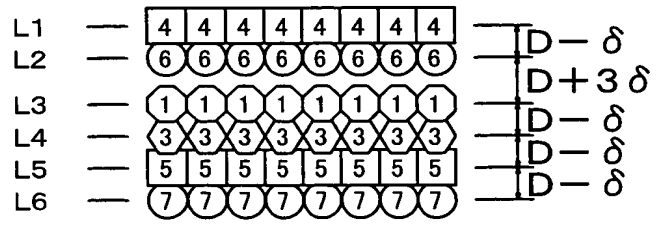

FIG. 12B

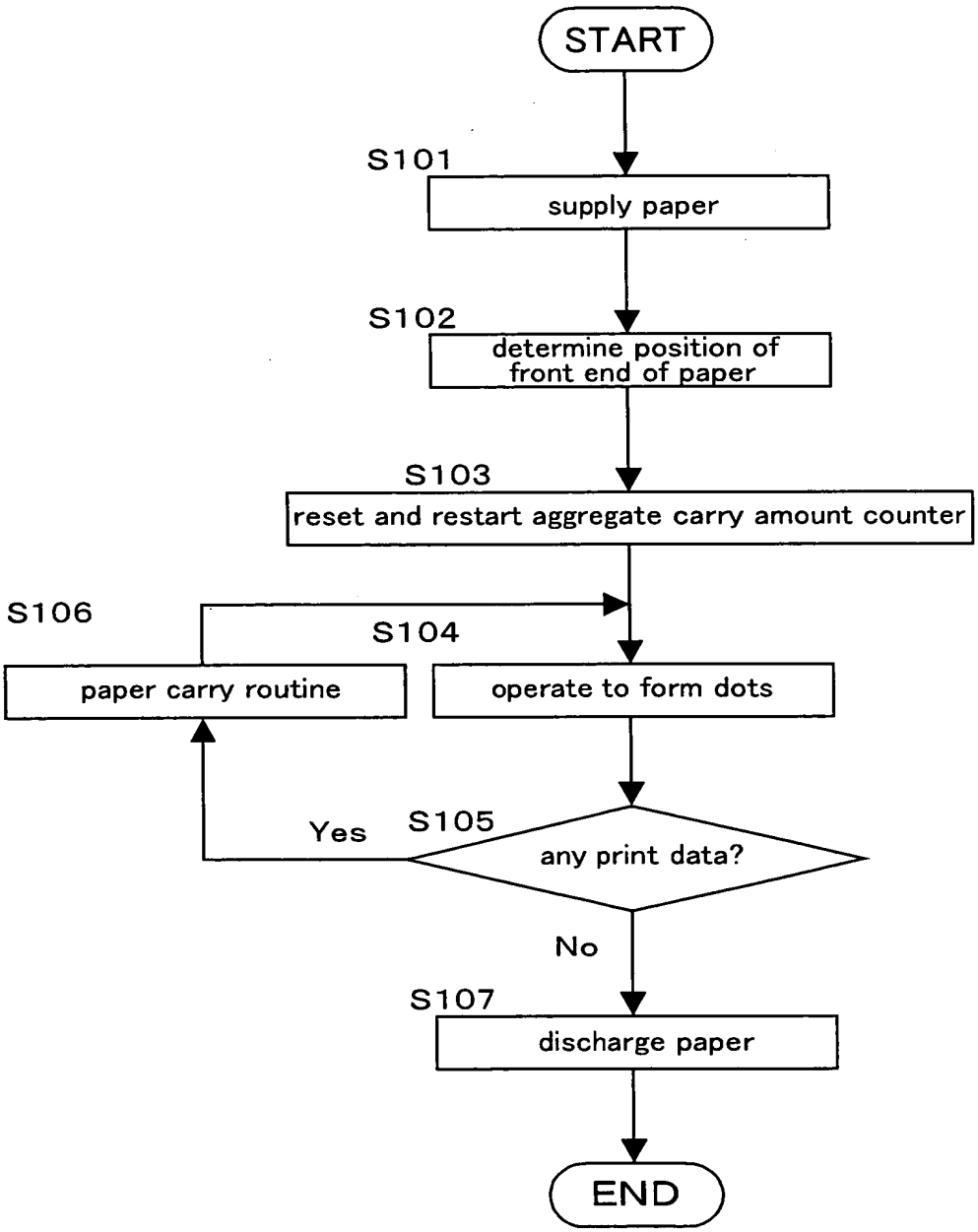
START
S101
supply paper
S102
determine position of front end of paper
S103
reset and restart aggregate carry amount counter
S106
S104
paper carry routine
operate to form dots
Yes
S105
any print data?
No
S107
discharge paper
END

FIG. 13

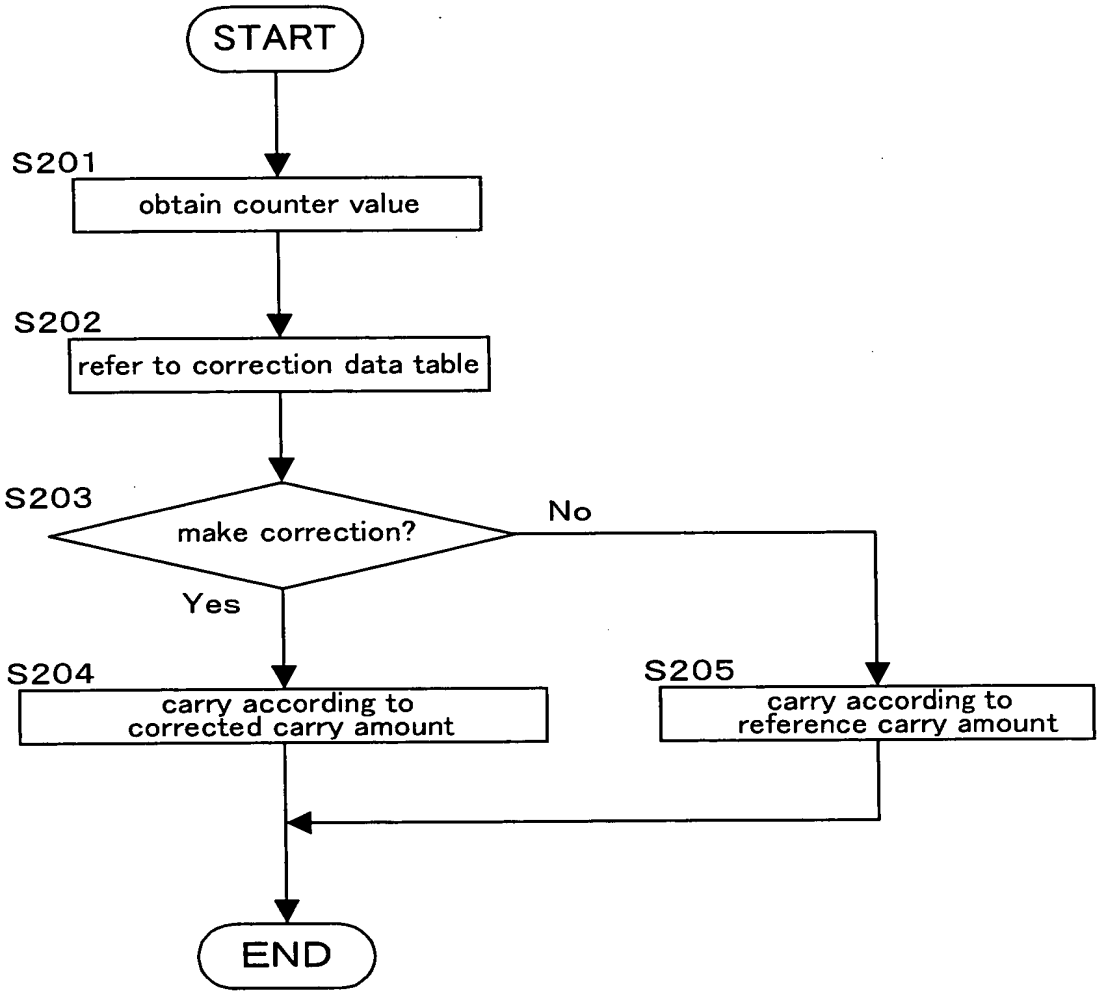
START
S201
obtain counter value
S202
refer to correction data table
S203
make correction?
No
Yes
S204
carry according to corrected carry amount
S205
carry according to reference carry amount
END

FIG. 14

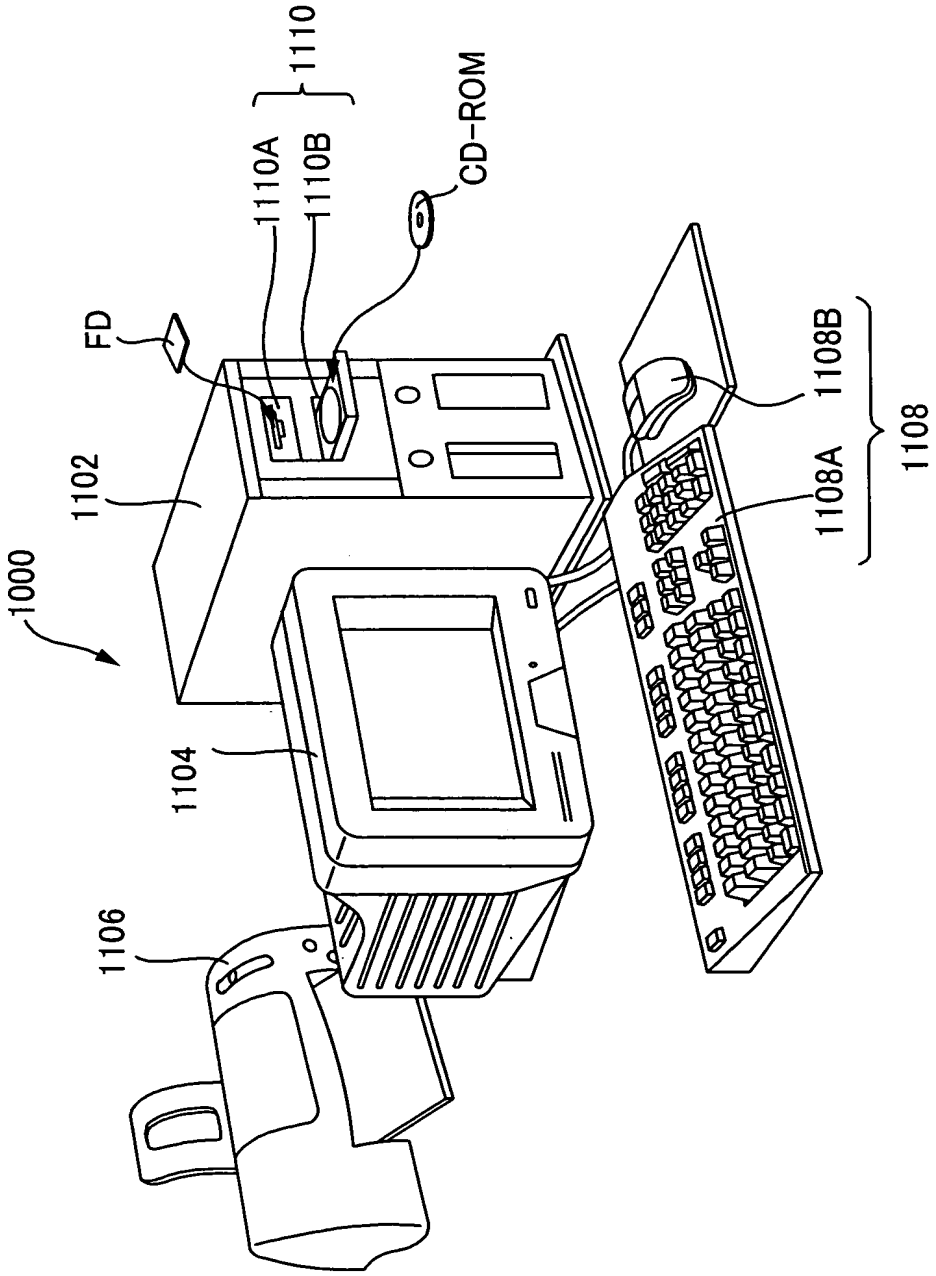
1110
1110A
1110B
CD-ROM
FD
1108B
1108
1108A
1102
1000
1104
1106

FIG. 15

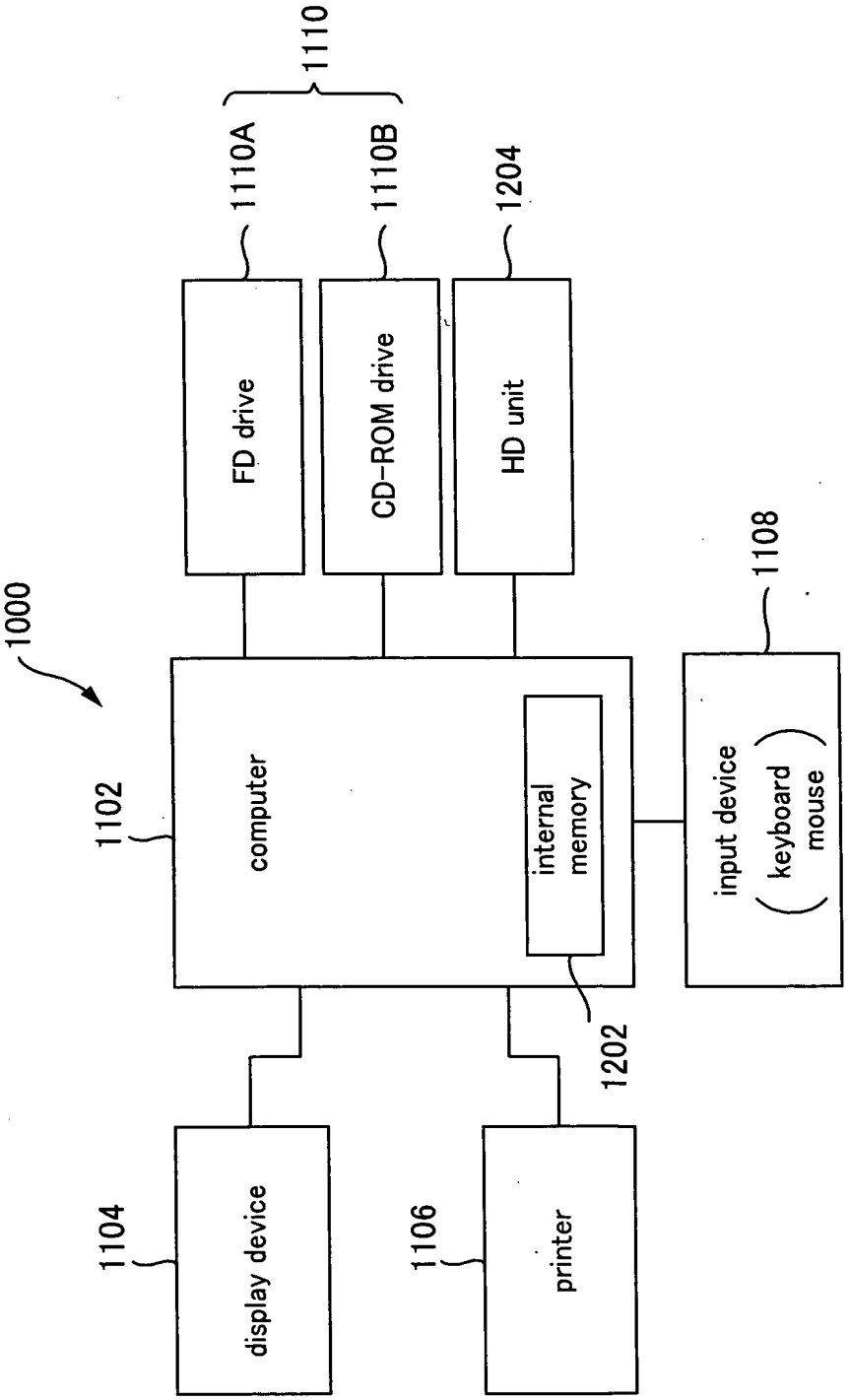
1000
1110
1110A
1110B
1204
FD drive
CD-ROM drive
HD unit
1108
1102
computer
internal memory
input device
keyboard
mouse
1202
1104
display device
1106
printer

FIG. 16

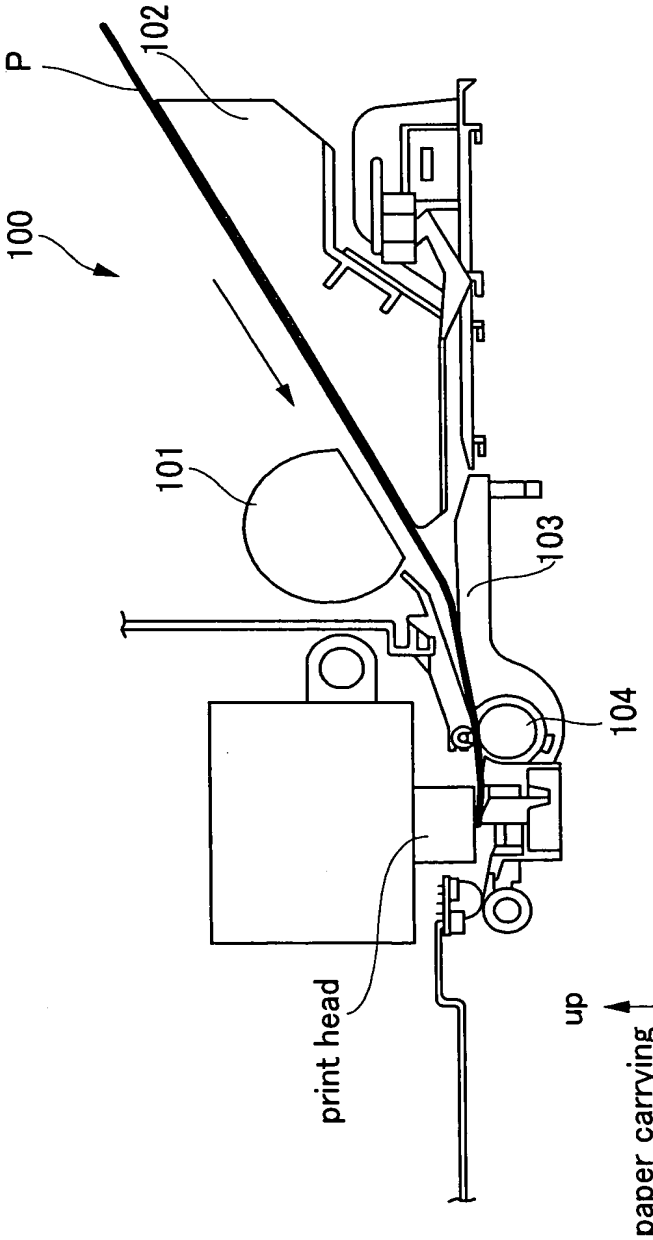
P
102
100
101
103
104
print head
up
down
paper carrying direction

FIG. 17